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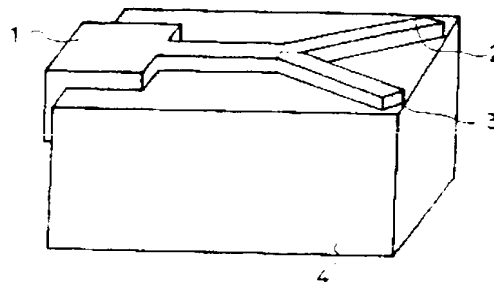
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TITLE : LIGHT MULTIPLEXER AND
DEMULPLEXER ELEMENT



ABSTRACT : PURPOSE: To enable branching of light with optional branching angle or layer- built branching, etc., by constituting a light multiplexing and demultiplexing element of an optical waveguide, forming further each waveguide for branched light from optical waveguide for fluorescence comprising fluorescent material having different emitted wavelength which are dispersed or diffused in the optical waveguide.

CONSTITUTION: An org. fluorescent dye or an inorg. fluorescent material is dispersed or diffused in acrylic resin, polycarbonate, polystyrene, etc. An optical waveguide having a desired pattern is formed of the org. polymer contg. the fluorescent material dispersed therein on a substrate 4 having a smaller refractive index than the polymer. Namely, a mask resist having a desired pattern is formed on the substrate 4 by the photolithographic technique, and an org. polymer contg. a fluorescent material having a center wavelength λ_1 of emitted light is coated on the part of the substrate 4 where a resist is not formed by spin coating or dipping so as to obtain a film having a fixed film thickness. Further, mask resists are formed successively of org. polymers contg. dispersed fluorescent materials having each center wave lengths λ_2 and λ_3 of emitted light. Thus, coating of desired pattern is obtd.

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